

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

HARI.006USH

SERIAL NO.

08/999,498

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

APPLICANT

Eliyahou Harari et al.

FILED

December 29, 1997

GROUP

~~1714~~ *AV 2818*

U. S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
<i>at</i>	A1	3 8 9 5 3 6 0	7/15/75	Cricchi et al.	365	230.03	
	A2	3 8 9 8 6 3 2	8/5/75	Spencer, Jr.	365	184	
	A3	3 9 0 6 4 5 5	9/16/75	Houston et al.	711	108	
	A4	3 9 1 4 7 5 0	10/21/75	Hadden, Jr.	365	184	
	A5	4 0 0 5 3 8 9	1/25/77	Penzel	711	173	
	A6	4 0 4 4 3 3 9	8/23/77	Berg	365	240	
	A7	4 0 5 8 7 9 9	11/15/77	George et al.	365	14	
	A8	4 0 6 4 4 0 5	12/20/77	Cricchi et al.	326	34	
	A9	4 0 9 0 2 5 8	5/16/78	Cricchi	365	184	
	A10	4 1 1 5 8 5 0	9/19/78	Houston et al.	707	1	
<i>at</i>	A11	4 1 3 0 8 9 0	12/19/78	Adam	365	184	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS.? (YES/NO)
<i>at</i>	B1	0 2 8 3 2 3 8	9/21/88	Europe	—	—	NO
	B2	5 2 8 7 3 8	1/22/77	Japan	—	—	
	B3	5 8 8 6 7 7 7	5/24/83	Japan	—	—	
	B4	5 8 2 1 5 7 9 4	12/15/83	Japan	—	—	NO
<i>at</i>	B5	5 8 2 1 5 7 9 5	12/15/83	Japan	—	—	YES

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

<i>at</i>	C1	J.E. Brewer et al., "Block-Oriented Random Access MNOS Memory," National Computer Conference and Exposition, Chicago, May 6-10, 1974, AFIPS Conference Proceedings, Vol. 43, pp. 837-840
	C2	J.E. Brewer et al., "Low Cost MNOS BORAM," Proceedings of IEEE National Aerospace Electronics Conference, NAECON '77, May 17-19, 1977, pp. 624-626
	C3	J.R. Cricchi et al., "Nonvolatile Block-Oriented RAM," IEEE International Solid-State Circuits Conference, Feb. 13-15, 1974, Digest of Technical Papers, pp. 204-205
<i>at</i>	C4	Raul-Adrian Cernea et al., "A 1Mb Flash EEPROM," 1989 IEEE International Solid-State Circuits Conference, pp. —

EXAMINER

DATE CONSIDERED

*at**09/14/98*

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

JC587 04/88 98 PTO	FORM 1449 (8-83)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. HARI.006USH	SERIAL NO. 08/999,498
	INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		APPLICANT Eliyahou Harari et al.	
			FILED December 29, 1997	GROUP 1714 <i>AV 2818</i>

U. S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
<i>at</i>	A12	4 1 4 1 0 8 1	2/20/79	Horne et al.	365	203	
	A13	4 1 9 3 1 2 8	3/11/80	Brewer	365	228	
	A14	4 2 4 1 4 2 4	12/23/80	Dickson et al.	365	195	
	A15	4 4 1 2 3 0 9	10/25/83	Kuo	365	185.33	
	A16	4 4 2 8 0 4 7	1/24/84	Hayn et al.	395	571	
	A17	4 4 3 3 3 8 7	2/21/84	Dyer et al.	702	159	
	A18	4 4 4 9 2 0 3	5/15/84	Adlhoeh	365	104	
	A19	4 4 5 1 9 0 5	5/29/84	Moyer	365	185.02	
	A20	4 4 6 0 9 0 2	7/17/84	Gee et al.	365	185.19	
	A21	4 4 6 8 7 2 9	8/28/84	Schwartz	711	172	
<i>at</i>	A22	4 5 2 1 8 5 2	6/4/85	Guttag	711	163	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS.? (YES/NO)
<i>at</i>	B6	5 9 4 5 6 9 5	3/14/84	Japan	—	—	NO
	B7	5 9 1 6 2 6 9 5	9/13/84	Japan	—	—	
	B8	5 9 1 8 6 0 1 5	10/22/84	Japan	—	—	
	B9	6 2 1 8 8 0 9 9	8/17/87	Japan	—	—	NO
<i>at</i>	B10	6 2 2 8 3 4 9 6	12/9/87	Japan	—	—	YES

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

<i>at</i>	C5	Kenneth L. Short, "Microprocessors and Programmed Logic," second edition. "Ch. 13.2.2 Electrically Erasable Programmable Read Only Memory, EEPROM" Prentice Hall International, 1987, pp. 492-495
	C6	Michael D. Fitzpatrick et al., "MNOS/SOS Memory Using High-Voltage Depletion-Mode CMOS Logic," pp. 196-199, Westinghouse Electric Corp., Baltimore, MD
	C7	J.R. Cricchi et al., "The Drain-Source Protected MNOS Memory Device and Memory Endurance," <u>IEDM Technical Digest</u> , 1973, pp. 126-129
<i>at</i>	C8	Virgil Kynett et al., "An In-System Reprogrammable 32Kx8 CMOS Flash Memory," <u>IEEE J. Solid-State Circuits</u> , Vol. 23, No. 5, October, 1988, pp. 1157-1163

EXAMINER 	DATE CONSIDERED 09/17/98
--	-----------------------------

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

SERIAL NO.

HARI.006USH

08/999,498

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

APPLICANT

Eliyahou Harari et al.

FILED

December 29, 1997

GROUP

1714 *AV 2818*

U. S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
<i>at</i>	A23 4 5 2 1 8 5 3	6/4/85	Gutttag	711	163	
	A24 4 5 2 7 2 5 7	7/2/85	Cricchi	365	184	
	A25 4 6 4 2 7 9 8	2/10/87	Rao	365	185.23	
	A26 4 6 8 5 0 8 4	8/4/87	Canepa	365	230.08	
	A27 4 7 5 8 9 8 6	7/19/88	Kuo	365	186	
	A28 4 7 5 8 9 8 8	7/19/88	Kuo	365	185.09	
	A29 4 7 6 3 3 0 5	8/9/88	Kuo	365	185.22	
	A30 4 7 8 0 8 5 5	10/25/88	Iida et al.	365	185.22	
	A31 4 7 9 6 2 3 5	1/3/89	Sparks et al.	365	189.07	
	A32 4 8 0 5 1 5 1	2/14/89	Terada et al.	371	21.1	
	A33 4 8 1 1 2 9 3	3/7/89	Knothe et al.	365	195	
	A34 4 8 1 1 2 9 4	3/7/89	Kobayashi et al.	365	185.22	
	A35 4 8 2 1 2 4 0	4/11/89	Nakamura et al.	365	195	
	A36 4 8 3 9 7 0 5	6/13/89	Tigelaar et al.	365	185.16	
	A37 4 8 4 1 4 8 2	6/20/89	Kreifels et al.	365	185.22	
<i>at</i>	A38 4 8 6 0 2 2 8	8/22/89	Carroll	365	185.09	

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS.? (YES/NO)
<i>at</i> B11 6 2 2 8 3 4 9 7	12/9/87	Japan	—	—	NO
B12 6 3 1 8 5 9 6	1/26/88	Japan	—	—	
B13 6 3 1 0 6 9 8 9	5/12/88	Japan	—	—	
B14 6 3 1 8 3 7 0 0	7/29/88	Japan	—	—	
<i>at</i> B15 6 3 2 2 5 9 9 9	9/20/88	Japan	—	—	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

<i>at</i> C9	Denny Cormier, "Erasable/Programmable Solid-State Memories," EDN, pp. 145-154, November 14, 1985
--------------	--

EXAMINER

DATE CONSIDERED

*at**09/14/98*

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1449
 833)

 U.S. DEPARTMENT OF COMMERCE
 PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

HARI.006USH

SERIAL NO.

08/999,498

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

APPLICANT

Eliyahou Harari et al.

FILED

December 29, 1997

GROUP

1714 AV 2818

U. S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
at	A39 4 8 6 0 2 6 1	8/22/89	Kreifels et al.	365	185.18	
	A40 4 8 6 0 2 6 2	8/22/89	Chiu	365	218	
	A41 4 8 7 8 2 0 3	10/31/89	Arakawa	365	185.09	
	A42 4 8 8 2 6 4 2	11/21/89	Tayler et al.	360	78.11	
	A43 4 8 8 7 2 3 4	12/12/89	Iijima	711	173	
	A44 4 9 2 0 4 7 8	4/24/90	Furuya et al.	711	136	
	A45 4 9 3 3 9 0 6	6/12/90	Terada et al.	365	185.21	
	A46 4 9 3 9 6 9 0	7/3/90	Momodomi et al.	365	185.17	
	A47 4 9 5 3 1 2 9	8/28/90	Kobayashi et al.	365	185.25	
	A48 5 0 3 3 0 2 3	7/16/91	Hsia et al.	365	185.12	
	A49 5 0 3 6 4 6 0	7/30/91	Takahira et al.	711	103	
	A50 5 0 4 3 9 4 0	8/27/91	Harari	365	185.03	
	A51 5 0 5 3 9 9 0	10/1/91	Kreifels et al.	711	103	
	A52 5 0 8 4 8 4 3	1/28/92	Mitsuishi et al.	365	218	
	A53 5 1 6 8 4 6 5	12/1/92	Harari	257	320	
at	A54 5 2 6 8 8 7 0	12/7/93	Harari	365	185.09	

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS.? (YES/NO)

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

EXAMINER

DATE CONSIDERED

09/14/98

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

JCS
PTO
1449
8-83)
U.S. PTO
09/23/98

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

HARI.006USH

SERIAL NO.

08/999,498

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

APPLICANT

Eliyahou Harari et al.

FILED

December 29, 1997

GROUP

1714 AV 2818

U. S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
at	A55 4 0 9 9 0 6 9	7/4/78	Cricchi et al.	365	218	
	A56 4 9 3 1 9 9 7	6/5/90	Mitsuishi et al.	365	185.04	
	A57 4 7 5 2 8 7 1	6/21/88	Sparks et al.	365	185.11	
	A58 4 9 7 0 6 9 2	11/13/90	Ali et al.	365	230.06	
	A59 4 9 4 9 3 0 9	8/14/90	Rao	365	185.12	
	A60 5 4 1 8 7 5 2	5/23/95	Harari et al.	365	218	
	A61 5 0 9 5 3 4 4	3/10/92	Harari	257	328	
	A62 5 1 6 3 0 2 1	11/10/92	Mehrotra et al.	365	185.03	
	A63 5 1 7 2 3 3 8	12/15/92	Mehrotra et al.	365	185.03	
at	A64 5 4 3 4 8 2 5	7/18/95	Harari	365	185.24	

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS. ?

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

at	C10	Colin S. Bill, et al.; A TEMPERATURE- AND PROCESS- TOLERANT 64K EEPROM, <u>IEEE Journal of Solid State Circuits</u> , Vol. SC-20, No. 5, 1985, pp. 979-985
	C11	Intel Corporation, 27F256 256K (32K x 8) CMOS FLASH MEMORY, DATA SHEET, May 1988, pp. 1-21
	C12	SEEQ Technology Incorp., 48F512 512K FLASH EEPROM - PRELIMINARY DATA SHEET, October 1988, pp. 2-1 - 2-24
at	C13	Wilson, "1-Mbit flash memories seek their role in system design," <u>Computer Design</u> , (March 1, 1989) pps. 30 and 32

EXAMINER

DATE CONSIDERED



09/14/98

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE**

ATTY. DOCKET NO.

HARI.006USH

SERIAL NO.

08/999,498

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

APPLICANT

Eliyahou Harari et al.

FILED

December 29, 1997

GROUP~~1714~~ AV 2818**U. S. PATENT DOCUMENTS**

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
at	A65 4 2 7 2 8 3 0	6/9/81	Moench	365	45	
	A66 4 2 8 7 5 7 0	9/1/81	Stark	365	104	
	A67 4 5 8 6 1 6 3	4/29/86	Koike	365	104	
	A68 4 6 5 3 0 2 3	3/24/87	Suzuki et al.	365	104	
	A69 4 8 4 7 8 0 8	7/11/89	Kobatake	365	104	
at	A70 5 7 1 9 8 0 8	2/17/98	Harari	365	185.33	

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS.? (YES/NO)

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

at	C14	Stark, M., "Two Bits Per Cell Rom," <u>IEEE Catalog No. 81-CH1626-1</u> , Library of Congress No. 80-85186, Order No. 341, Spring Comp Con 1981, Feb. 23-26, Twenty-Second Computer Society International Conference, San Francisco, CA, pp. 209-212
	C15	Furuyama et al., "An Experimental 2-Bit/Cell Storage Dram For Macro Cell Or Memory-On-Logic Application," pp. 4.4.1 - 4.4.4, <u>IEEE</u> , (1988)
	C16	Horiguchi et al., "An Experimental Large-Capacity Semiconductor File Memory Using 16-Levels Cell Storage," <u>IEEE Journal Of Solid-State Circuits</u> , Vol. 23, No. 1 (February, 1988), pp. 27-33
	C17	Krick, P.J., "Three-State MNOS Fet Memory Array," <u>IBM Technical Disclosure Bulletin</u> , Vol. 18, No. 12, pps. 4192-4193 (May, 1976)
	C18	Alberts, et al., "Multi-Bit Storage Fet EAROM Cell," <u>IBM Technical Disclosure Bulletin</u> , Vol. 24, No. 7A, pps. 3311-3314 (December, 1981)
at	C19	Bleiker et al., "A Four-State EEPROM Using Floating-Gate Memory Cells," <u>IEEE Journal of Solid-State Circuits</u> , Vol. SC-22, No. 3 (June, 1987), pp. 460-463

EXAMINER**DATE CONSIDERED**

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO 1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

SERIAL NO.

HARI.006USH

08/999,498

APPLICANT

Eliyahou Harari et al.

FILED

December 29, 1997

GROUP

1714 *AV 2818*

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

U. S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
<i>at</i>	A71 5 0 9 5 4 6 1	3/10/92	Miyakawa et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	A72 5 2 7 0 9 7 9	12/14/93	Harari et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	A73 5 2 7 0 9 8 0	12/14/93	Pathak et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	A74 5 2 7 4 5 9 9	12/28/93	Ema	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	A75 5 2 9 7 0 9 6	3/22/94	Terada et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	A76 5 3 8 4 7 4 3	1/24/95	Rouy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	A77 5 3 8 8 0 8 3	2/7/95	Assar et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<i>at</i>	A78 5 6 1 9 4 5 1	4/8/97	Costabello et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANS.? (YES/NO)
<i>at</i>	B16 0 3 9 2 8 9 5	10/17/90	European Pat. Off.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NO
<i>at</i>	B17 4 1 1 9 3 9 4	12/19/91	Germany	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

<i>at</i>	C20	Nakayama et al. "A 60ns 16Mb Flash EEPROM With Program and Erase Sequence Controller". <u>IEEE Journal of Solid-State Circuits</u> , Vol. 26, No. 11, Nov. 1991, New York US, pp. 1600-1605

EXAMINER

DATE CONSIDERED

*W. J. ...**09/14/98*

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.